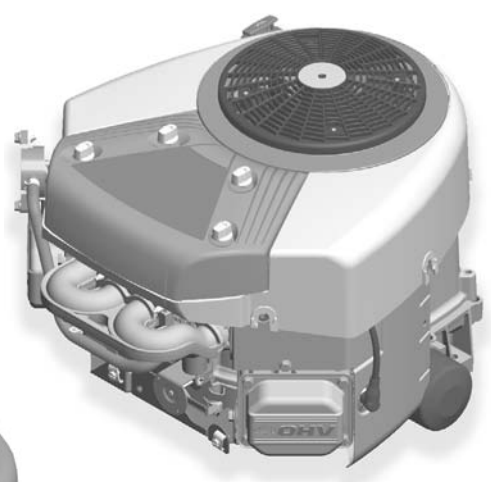
BRIGGS & STRATTON

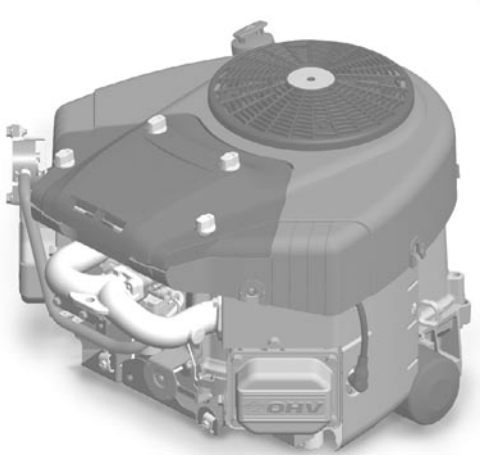
THE POWER WITHIN™

Operator's Manual

Model 400000 | **Intek Extended Life Series**

Model 440000 | **Intek Extended Life Series**





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Safety References

The safety alert symbol is used to identify safety information about hazards that can result in personal injury. A signal word (DANGER, WARNING, or CAUTION) is used with the alert symbol to indicate the likelihood and the potential severity of injury. In addition, a hazard symbol may be used to represent the type of hazard.

DANGER indicates a hazard which, if not avoided, **will result in death or serious injury.**

WARNING indicates a hazard which, if not avoided, **could result in death or serious injury.**

CAUTION indicates a hazard which, if not avoided, **might result in minor or moderate injury.**

CAUTION, when used **without** the alert symbol, indicates a situation that **could result in damage to the engine.**

This manual contains safety information to make you aware of the hazards and risks associated with engines, and how to avoid them. Because Briggs & Stratton does not necessarily know what equipment this engine will power, it is important that you read and understand these instructions and the instructions for the equipment this engine powers.

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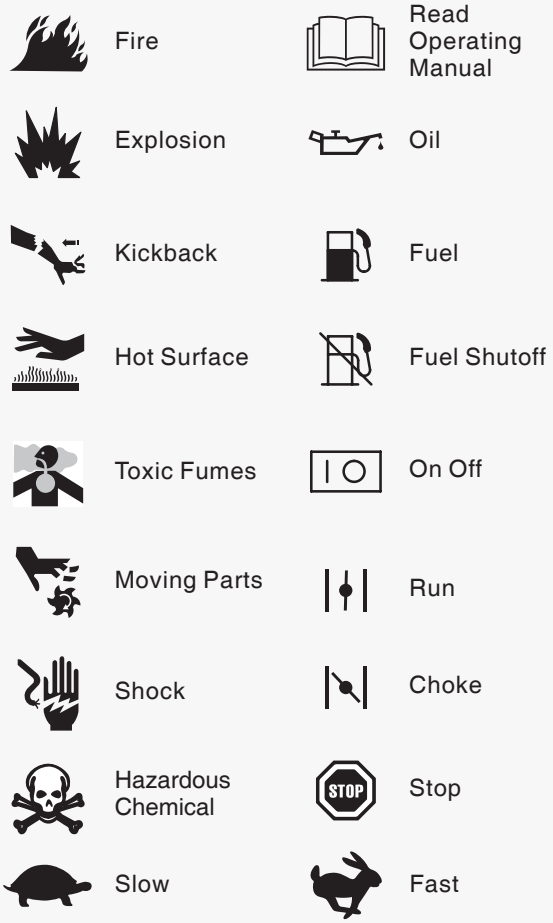
SYMBOLS ASSOCIATED WITH THIS ENGINE:



WARNING

Briggs & Stratton does not approve or authorize the use of these engines on 3-wheel All Terrain Vehicles (ATVs), motor bikes, aircraft products or vehicles intended for use in competitive events. Use of these engines in such applications could result in property damage, serious injury (including paralysis), or even death.

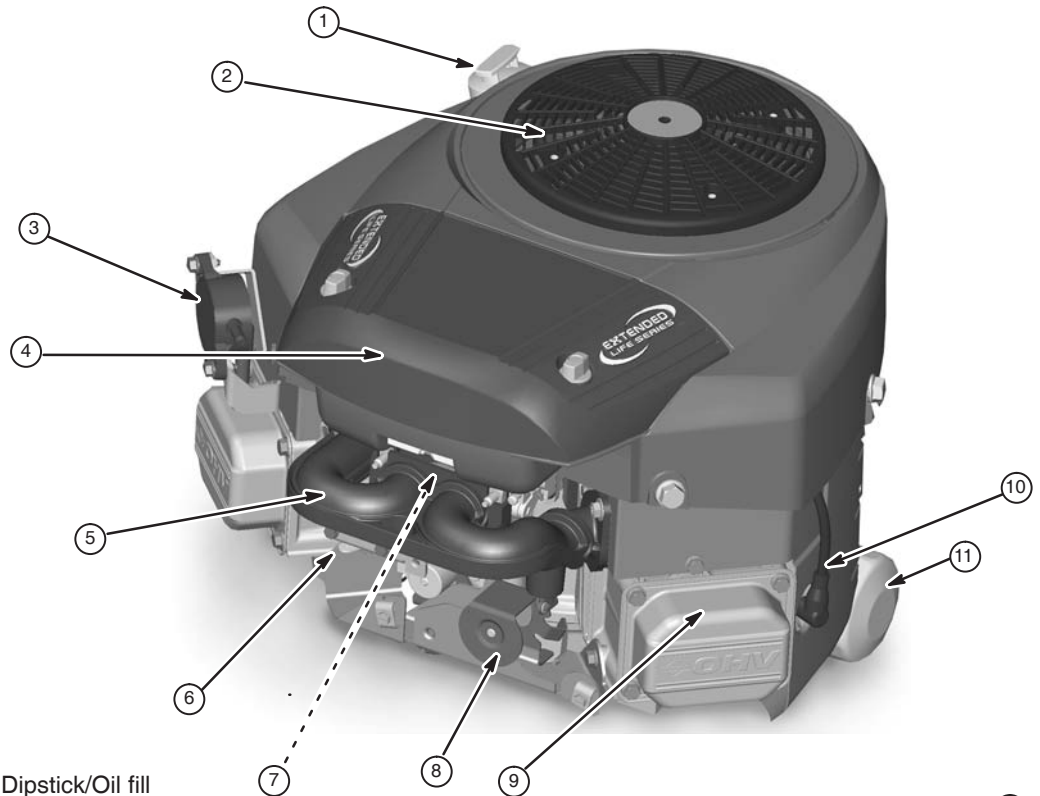
WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

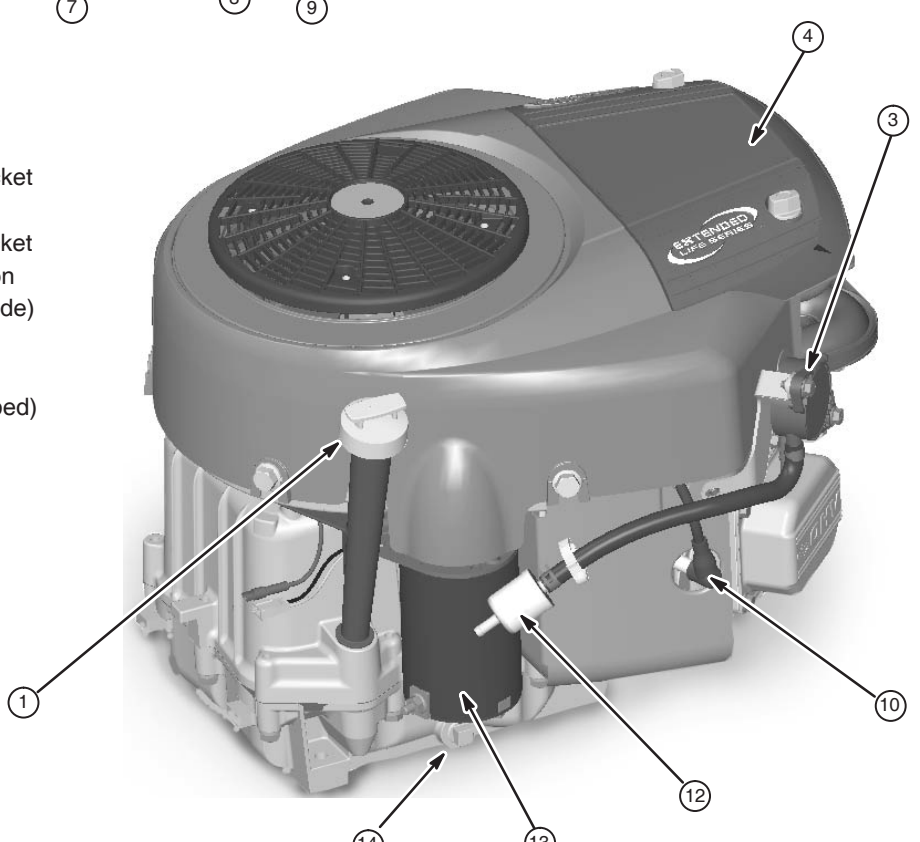
CAUTION

This engine is shipped from Briggs & Stratton without oil. If you start the engine without oil, the engine will be damaged beyond repair and will not be covered under warranty.

Features



1. Dipstick/Oil fill
2. Rotating screen
3. Fuel pump
4. Air cleaner
5. Intake manifold
6. Choke control bracket
7. Carburetor
8. Speed control bracket
9. Engine Identification (Model-Type-Code)
10. Spark plug wire
11. Oil filter
12. Fuel filter (if equipped)
13. 12V electric starter
14. Oil drain plug



Safety Information

⚠ WARNING

Gasoline and its vapors are extremely flammable and explosive.

Fire or explosion can cause severe burns or death.

WHEN ADDING FUEL

- Turn engine OFF and let engine cool at least 2 minutes before removing gas cap.
- Fill fuel tank outdoors or in well-ventilated area.
- Do not overfill fuel tank.
- Keep gasoline away from sparks, open flames, pilot lights, heat, and other ignition sources.
- Check fuel lines, tank, cap, and fittings frequently for cracks or leaks. Replace if necessary.

WHEN STARTING ENGINE

- Make sure spark plug, muffler, fuel cap and air cleaner are in place.
- Do not crank engine with spark plug removed.
- If fuel spills, wait until it evaporates before starting engine.
- If engine floods, set choke to OPEN/RUN position, place throttle in FAST and crank until engine starts.

WHEN OPERATING EQUIPMENT

- Do not choke carburetor to stop engine.

WHEN TRANSPORTING EQUIPMENT

- Transport with fuel tank EMPTY.

WHEN STORING GASOLINE OR EQUIPMENT WITH FUEL IN TANK

- Store away from furnaces, stoves, water heaters or other appliances that have pilot light or other ignition source because they can ignite gasoline vapors.

⚠ WARNING

Engines give off carbon monoxide, an odorless, colorless, poison gas.

Breathing carbon monoxide can cause nausea, fainting or death.

- Start and run engine outdoors.
- Do not start or run engine in enclosed area, even if doors or windows are open.

⚠ WARNING

Starting engine creates sparking.

Sparking can ignite nearby flammable gases.

Explosion and fire could result.

- If there is natural or LP gas leakage in area, do not start engine.
- Do not use pressurized starting fluids because vapors are flammable.

⚠ WARNING

Rapid retraction of starter cord (kickback) will pull hand and arm toward engine faster than you can let go.

Broken bones, fractures, bruises or sprains could result.

- When starting engine, pull cord slowly until resistance is felt, then pull rapidly.
- Direct coupled equipment components such as, but not limited to, blades, impellers, pulleys, sprockets, etc., must be securely attached.

Safety Information

⚠ WARNING

Rotating parts can contact or entangle hands, feet, hair, clothing, or accessories.

Traumatic amputation or severe laceration can result.

- Operate equipment with guards in place.
- Keep hands and feet away from rotating parts.
- Tie up long hair and remove jewelry.
- Do not wear loose-fitting clothing, dangling drawstrings or items that could become caught.

⚠ WARNING

Running engines produce heat. Engine parts, especially muffler, become extremely hot.

Severe thermal burns can occur on contact.

Combustible debris, such as leaves, grass, brush, etc. can catch fire.

- Allow muffler, engine cylinder and fins to cool before touching.
- Remove accumulated combustibles from muffler area and cylinder area.
- Install and maintain in working order a spark arrester before using equipment on forest-covered, grass-covered, brush-covered unimproved land. The state of California requires this (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal land.

⚠ WARNING

Unintentional sparking can result in fire or electric shock.

Unintentional start-up can result in entanglement, traumatic amputation, or laceration.

BEFORE PERFORMING ADJUSTMENTS OR REPAIRS

- Disconnect spark plug wire and keep it away from spark plug.
- Disconnect battery at negative terminal (only engines with electric start.)
- Do not strike the flywheel with a hammer or hard object because the flywheel may later shatter during operation.
- Do not tamper with governor spring, links or other parts to increase engine speed.
- Use only correct tools.

WHEN TESTING FOR SPARK

- Use approved spark plug tester.
- Do not check for spark with spark plug removed.

Starting

1. Check oil level. Ensure level is at FULL mark on dipstick. Use a high quality motor oil. Review oil recommendations for selection of oil grade for expected starting temperature.
2. Open the fuel shut-off valve, if equipped.
3. Move choke control to CHOKE and speed control to FAST or RUN.
4. Insert key and turn to START.

   Note: To prolong starter life, use short starting cycles (5 seconds maximum, then wait one minute). Follow equipment manufacturer's recommendations for charging battery.
5. Let engine warm up.
6. Choke Equipped: Move choke control lever toward RUN a short distance at a time over several seconds in warm weather or minutes in cold weather. Let engine run smoothly before each change.
7. Operate with choke in RUN or OPEN position.

CAUTION

Operation of this engine is for the application it was intended. All the components used to build this engine assembly must remain in place for the proper operation of this engine.

OIL PRESSURE SWITCH

If engine is equipped with an oil pressure switch, read the operating instructions supplied by the equipment manufacturer to understand how the switch functions.

WARNING

Engines give off carbon monoxide, an odorless, colorless, poison gas.

Breathing carbon monoxide can cause nausea, fainting or death.

Stopping

1. Move speed control to SLOW, if equipped.
2. Turn key to OFF. Remove key and store out of reach of children.
3. Close fuel shut-off valve, if equipped.

WARNING

DO NOT stop engine by choking carburetor. Backfire, fire or engine damage could occur.

Need assistance?

1-800-233-3723
(USA and Canada ONLY, Pre-recorded message.)
www.briggsandstratton.com

Troubleshooting

Engine will not start.

♦ Out of Fuel

- Add clean fresh fuel.

♦ Engine Flooded

- Move CHOKE to RUN position. Turn engine over (use short starting cycles 5 seconds, then wait a minute) until engine starts.

♦ Low Oil

- Check oil level with dipstick.
- Refer to Oil Pressure Switch in *Maintenance* section of this manual.

♦ Spark Plug Fouling

- Remove spark plug. Clean, check gap, re-install. Refer to *Maintenance* section for details.

♦ Oil Level is OVER FULL mark on dipstick.

- Drain excess oil from engine to bring level to FULL mark on dipstick.
- Check air cleaner filter for oil saturation. If saturated, clean or replace filter.

⚠ WARNING

- Ensure fuel cap, and air cleaner are in place before starting engine.
- Before refueling – turn engine OFF and let engine cool at least 2 minutes before removing gas cap.
- Check fuel lines, tank, cap, and fittings for cracks or leaks. Replace if necessary.
- Do not crank engine with spark plug removed.

CAUTION

DO NOT OVERFILL. Overfilling crankcase with oil may cause smoking, hard starting, spark plug fouling or oil saturation of air filter.

Engine is Smoking or Running Rough.

♦ Spark Plugs Fouled

- Check and ensure the spark plugs are clean. Check the gap with a feeler gauge. If necessary, reset to .76 mm or .030 in.
- Replace the spark plugs if upon inspection the electrode is burned or worn.

♦ Air Cleaner Dirty

- Ensure there is nothing blocking the air intake of the engine. Check the air cleaner cartridge for dirt or debris that may be clogging air movement. If very dirty replace with new cartridge.

CAUTION

If engine is tipped to transport equipment, to remove debris, to drain oil, etc., **keep the spark plug side of engine up.**

Oil

Capacity

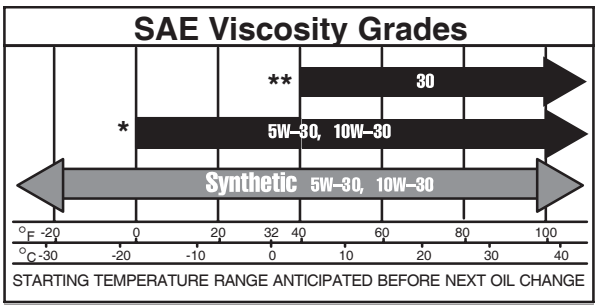
Engine without oil filter holds approximately 1-7/8 quarts (60 ounces; 1.8 liter).

Engine equipped with oil filter holds approximately 2 quarts (64 ounces; 1.9 liters).

Recommendations

- Use a high quality detergent motor oil, such as Briggs & Stratton 30W, Part Number 100005 (20 oz) or 100028 (48 oz).
- DO NOT use special additives.
- Choose a viscosity according to the table shown.

Note: Synthetic oil meeting ILSAC GF-2, API certification mark and API service symbol (shown at left) with "SJ/CF ENERGY CONSERVING" or higher, is an acceptable oil at all temperatures. **Use of synthetic oil does not alter required oil change intervals**.



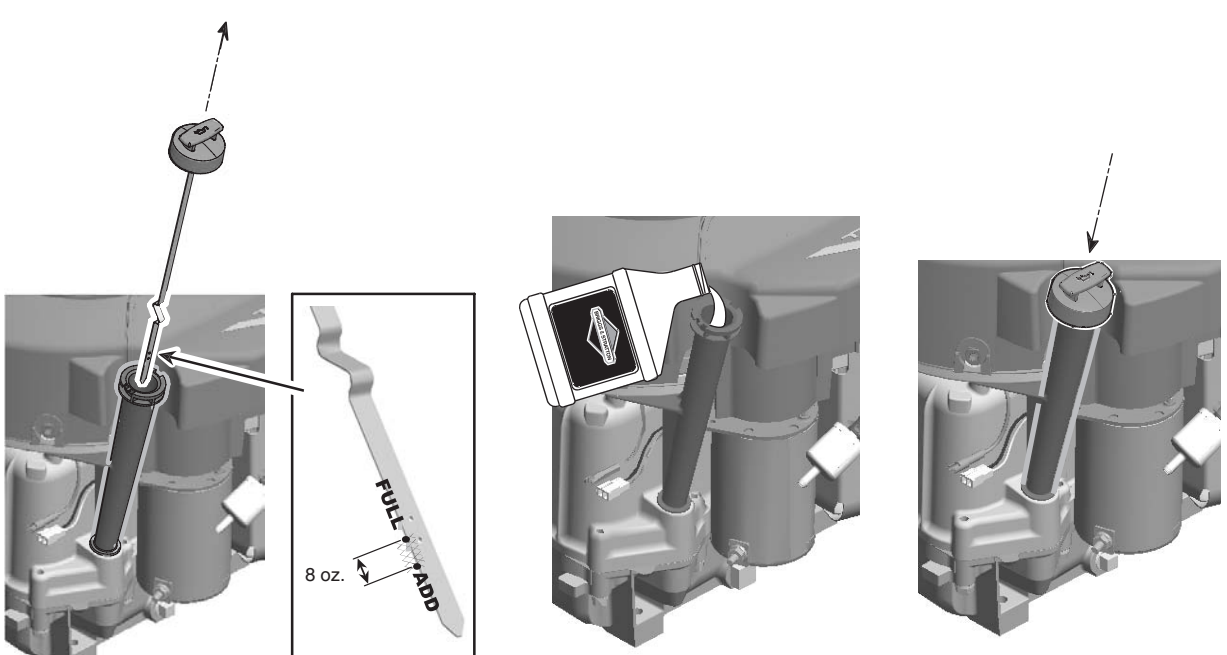
CAUTION

* Air cooled engines run hotter than automotive engines. The use of non-synthetic multi-viscosity oils (5W-30, 10W-30, etc.) in temperatures above 40° F (4° C) will result in higher than normal oil consumption. When using a multi-viscosity oil, check oil level more frequently.

** SAE 30 oil, if used below 40° F (4° C), will result in hard starting and possible engine bore damage due to inadequate lubrication.

Checking and Adding Oil

1. Place engine level. Clean around dipstick and oil fill.
2. Remove dipstick and wipe clean with cloth.
3. Tighten dipstick down. Remove & check oil level.
4. If oil is needed, slowly pour into oil fill tube. Add only a couple ounces and recheck level.
5. Fill to FULL line on dipstick.
6. Replace dipstick. Tighten down firmly.



Fuel

Recommendations

- Use clean, fresh, regular unleaded gasoline with a minimum of 85 octane. Fresh fuel prevents gum from forming in the fuel system or on essential carburetor parts. Purchase fuel in quantity that can be used within 30 days.
- Do not use gasoline which contains Methanol.
- Do not mix oil with gasoline.
- For engine protection use Briggs & Stratton Gasoline Additive available from your Authorized Briggs & Stratton Dealer (P/N 5041 or single use pouch).
- This engine is certified to operate on gasoline. Exhaust Emission Control System: EM (Engine Modifications).

Adding Fuel

1. Clean area around fuel cap and remove.
2. Replace cap before starting.

CAUTION

Some fuels, called oxygenated or reformulated gasoline, are gasoline blended with alcohols or ethers. Excessive amounts of these blends can damage the fuel system or cause performance problems. If any undesirable operating symptoms occur, use gasoline with a lower percentage of alcohol or ether.

WARNING

- Turn engine OFF and let engine cool at least 2 minutes before removing fuel cap.
- Fill fuel tank outdoors or in well-ventilated area.
- DO NOT overfill fuel tank. Fill tank to approximately 1-1/2 inches below top of neck to allow for fuel expansion.
- If fuel spills, wait until it evaporates before starting engine.
- Keep fuel away from sparks, open flames, pilot lights, heat and other ignition sources.
- Check fuel lines, tank, cap, and fittings frequently for cracks or leaks. Replace if necessary.

Maintenance

Regular maintenance will improve the performance and extend the life of the engine. See any Authorized Briggs & Stratton Dealer for service. **Use only genuine Briggs & Stratton parts. Other parts may not perform as well, may damage the engine, and may result in injury.** In addition, use of other parts may void your warranty.

Emission Control

Maintenance, replacement or repair of the emission control devices and systems may be performed by any nonroad engine repair establishment or individual. However, to obtain no charge repairs under the terms and provisions of the Briggs & Stratton warranty statement, any service or emission control part repair or replacement must be performed by a factory authorized dealer. See Emission Warranty section for details.

Follow the instructions and schedules indicated below.

⚠ WARNING

Unintentional sparking can result in fire or electric shock.

Fire or explosion can cause severe burns or death.

Unintentional start-up can result in entanglement, traumatic amputation, or laceration.

Before performing maintenance:

- Disconnect spark plug wire and keep it away from spark plug.
- Disconnect battery at negative terminal (only engines with electric start).
- Do not strike the flywheel with a hammer or hard object because the flywheel may later shatter during operation.
- Do not tamper with governor spring, links or other parts to increase engine speed.
- Use only correct tools.

When testing for spark:

- Use approved spark plug tester.
- Do not check for spark with spark plug removed.

Task *Perform task at hourly or calendar interval, whichever comes first.*	**Every 8 Hours or Daily**	**25 Hours**	**50 Hours**	**100 Hours**	**100 - 400 Hours**
Check Oil Level	■				
Clean Debris	■				
Service Air Cleaner*	■	■			
Change Oil **	■	■	■		
Replace Spark Plugs	■	■	■	■	
Clean Air Cooling System	■	■	■	■	
Replace Fuel Filter, If Equipped	■	■	■	■	
Clean Combustion Chamber	■	■	■	■	■

* Clean more often under dusty conditions or when airborne debris is present. Replace air cleaner, if very dirty.

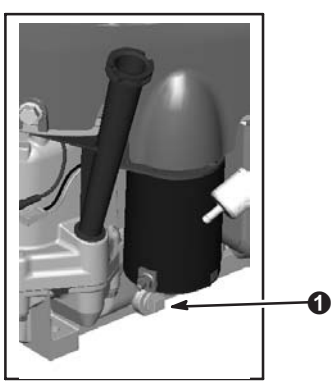
** **Change oil after first 5 to 8 hours of use**, then every 50 hours. Change oil every 25 hours when operating the engine under heavy load or in high temperatures.

Changing Oil

Change oil after first 5 to 8 hours of use, then every 50 hours. Change oil every 25 hours when operating the engine under heavy load or in high temperatures.

1. Place engine/equipment level.
2. Change oil with engine OFF but still warm.
3. Clean around oil drain plug ❶ and remove.
4. Drain oil into appropriate receptacle.
5. Reinstall drain plug.
6. Clean around dipstick and remove.
7. Fill to FULL mark on dipstick with new oil. **DO NOT OVERFILL.**

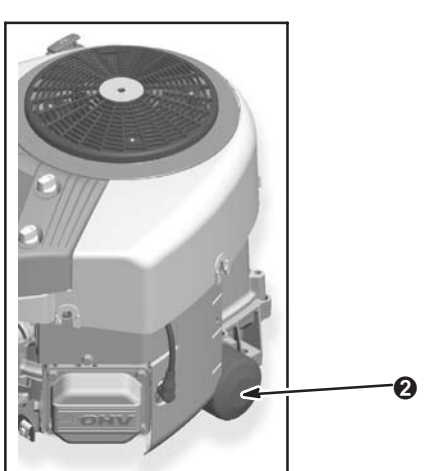
   Note: See **Oil Capacity**.
8. Reinstall dipstick firmly.



Changing Oil Filter

Change oil filter after every 100 hours of use or every season.

1. After draining engine oil, remove oil filter. ❷
2. Before installing new filter, lightly oil filter gasket with fresh, clean oil.
3. Screw filter on by hand until gasket contacts oil filter adapter. Tighten 1/2 to 3/4 turn more.
4. Add fresh oil. Fill to FULL line on dipstick.
5. Start and run engine at idle to check for leaks.
6. Stop engine. Re-check oil level. Add oil if required.



⚠ WARNING

- Disconnect spark plug wires and keep away from spark plugs.
- Disconnect battery at negative pole.

CAUTION

Used oil is a hazardous waste product. Dispose of used oil properly. Do not discard with household waste. Check with your local authorities, service center, or dealer for safe disposal/recycling facilities.

Oil Pressure Switch

If engine is equipped with an oil pressure switch, the equipment will have a device that warns of a drop in oil pressure. Read the operating instructions supplied by the equipment manufacturer to understand how the device functions.

The device may indicate low pressure if the oil level drops below the ADD mark on the dipstick. See “Checking And Adding Oil”.

CAUTION

If oil pressure signal continues and the oil level is between **ADD** and **FULL** mark on dipstick, **Do not try to restart engine**. Contact an Authorized Briggs & Stratton Service Dealer. Do not operate engine until oil pressure is corrected.

Extended Life Series™ Air Cleaner

1. To remove, loosen the screws of the air cleaner cover and pull cover off. ❶
2. The air cleaner cartridge is located under the cover. To remove the cartridge, pull up along the outside edge until it snaps out. ❷
3. Inspect the cartridge and brush off any dirt or debris. Clean engine around air cleaner area.

CAUTION

Do not use pressurized air or a solvents to clean cartridge. (They may damage the cartridge.)

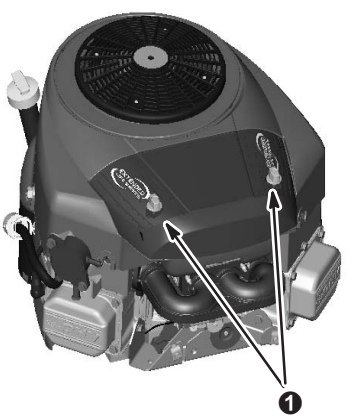
Improper installation of air cleaner cover may cause damage to engine.

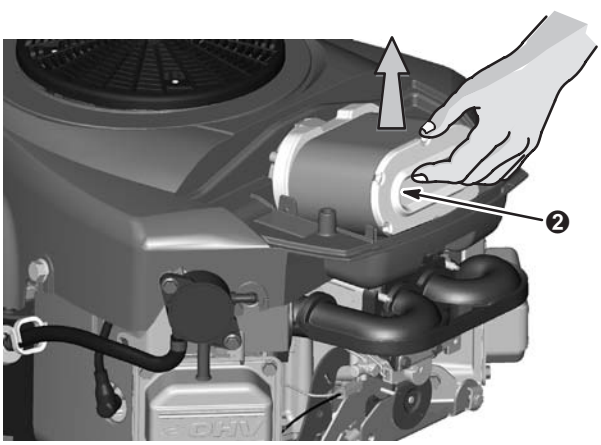
Note: The cartridge is surrounded by a thin foam sleeve. If this sleeve is torn or damaged, replace the entire cartridge.

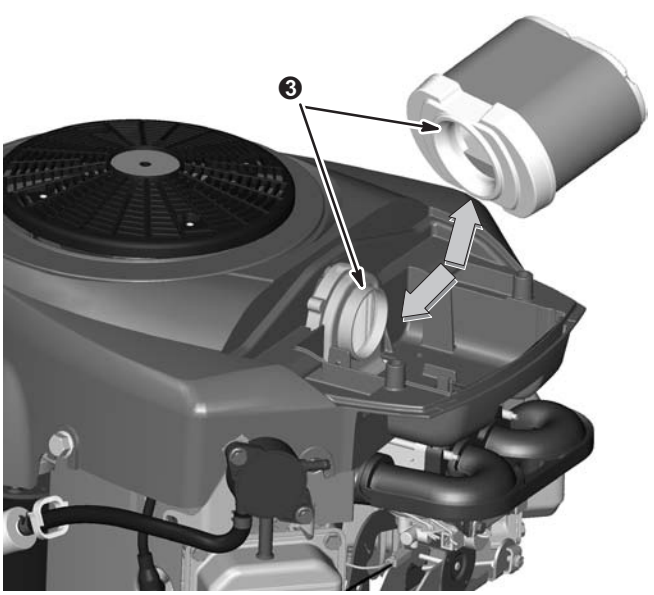
CAUTION

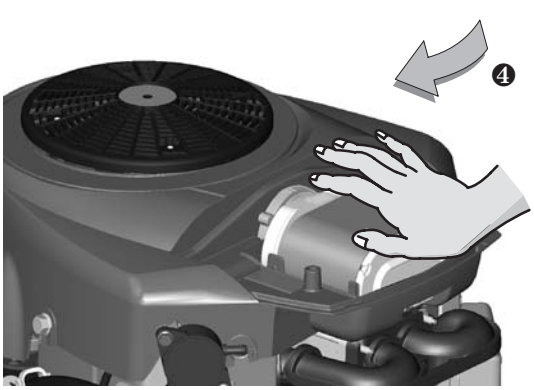
DO NOT OIL the foam sleeve or the cartridge, this will damage the cartridge. If there is oil or heavy debris on the cartridge, replace immediately.

4. Replace cartridge by aligning the hole of the cartridge with the air vent on the engine. ❸
5. Push the cartridge in, toward the engine, until cartridge snaps into place. ❹
6. Reinstall air cleaner cover and tighten screws.









Flat Panel Air Cleaner

1. See illustration for removing and installing air cleaner cover.
2. Carefully remove air cleaner cartridge, and foam pre-cleaner (if equipped) to prevent debris from entering carburetor.

3. Wash pre-cleaner in liquid detergent and water to clean. Squeeze dry in a clean cloth. Saturate with engine oil. Remove ALL EXCESS oil on pre-cleaner by squeezing inside a clean absorbent cloth.

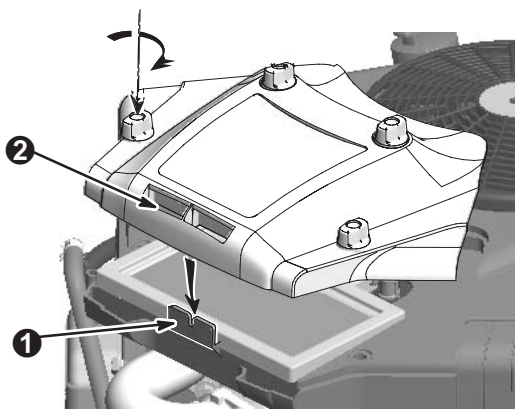
Note: Always replace cartridge and pre-cleaner if damaged.

4. Install pre-cleaner in base with mesh side up.
5. Install cartridge on pre-cleaner.
6. Replace cover. To ensure proper fit, tabs ❶ (if equipped), must be hooked and visible into slots ❷.
7. Tighten knobs completely to secure cover.

CAUTION

Do not use pressurized air or a solvents to clean cartridge. (They may damage the cartridge.)

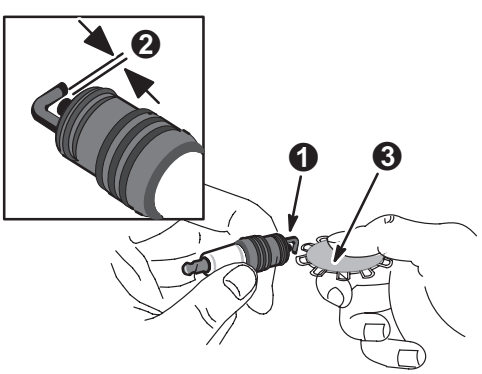
Improper installation of air cleaner cover may cause damage to engine.



Spark Plug

Check the spark plug every 100 hours. Replace the spark plug if upon inspection the electrodes ❶ are burned or worn. Ensure the spark plug is clean. Check the gap ❷ with a feeler gauge ❸ and reset to .76 mm or 0.030 in. if necessary. Use only Briggs & Stratton Spark Tester (part number 19368) to check for spark.

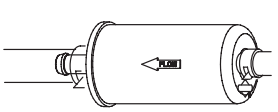
Note: In some areas, local law requires using resistor spark plug to suppress ignition signals. If this engine was originally equipped with resistor spark plug, use same type for replacement.



Fuel System

Drain fuel tank or close fuel shut-off valve before replacing fuel filter. Otherwise, fuel can leak out creating a fire/explosion hazard.
Replacement parts for fuel system (cap, hoses, tanks, filters, etc.) must be the same as original parts, otherwise fire can occur.

Replace in-line fuel filter, if equipped, every 100 hours.



FUEL FILTER

Muffler

Replacement parts for the muffler must be the same and installed in the same position as the original parts, otherwise fire can occur.

Carburetor Adjustment

The carburetor on this engine is not adjustable.

Engines operated above 5000 feet (1524 meters) may require a high altitude carburetor main jet. Contact a Briggs & Stratton Authorized Service Dealer for high altitude carburetor main jet information.

WARNING

The manufacturer of the equipment on which this engine is installed specifies top speed at which the engine will be operated. DO NOT EXCEED this speed.

Combustion Deposits

We recommend that after every 100-400 hours you have an authorized Briggs & Stratton Service Dealer remove combustion deposits from the cylinder, cylinder head, top of piston, and around valves.

Cleaning Debris

Daily or before every use, clean accumulated debris from engine. Keep linkage, spring and controls clean.

Keep muffler area clean and muffler in working order. Daily or more often, before running engine, clean muffler area to remove all grass and combustible debris. If engine muffler is equipped with spark arrester screen, remove for cleaning and inspection. Replace if damaged or plugged.

WARNING

Engine parts should be kept clean to reduce the risk of overheating and ignition of accumulated debris.

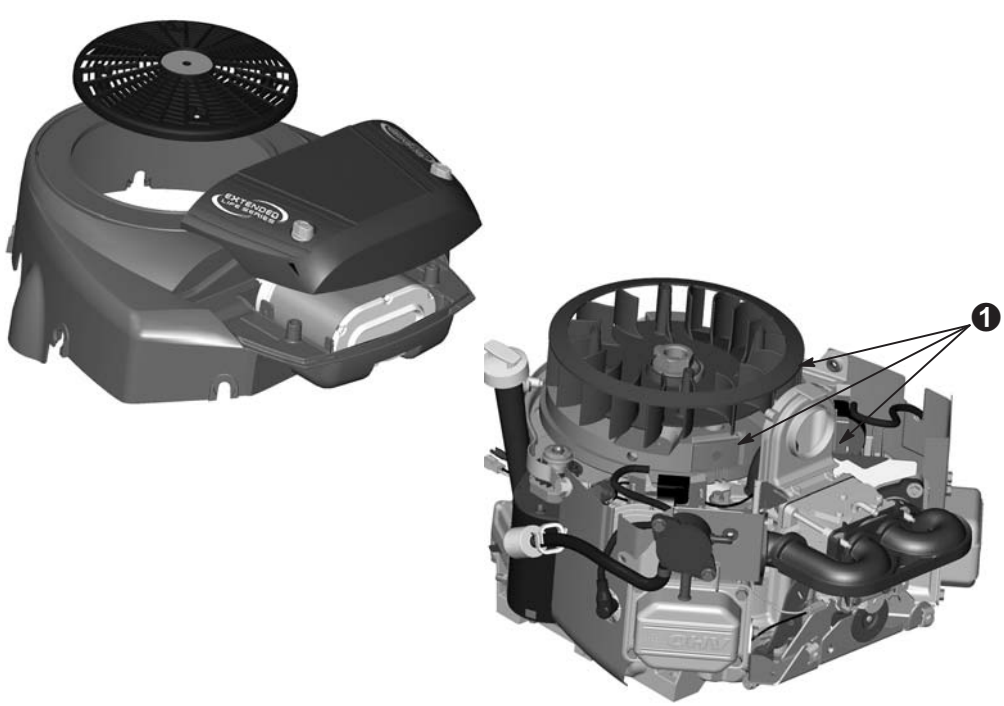
Air Cooling System

Over time debris may accumulate in cylinder cooling fins and cannot be removed without partial engine disassembly. We recommend that you have an authorized Briggs & Stratton Service Dealer clean the air cooling system at the recommended intervals.

Proper cleaning will require the removal of blower housing and cleaning of areas shown.❶ This prevents overheating and engine damage.
Equally important is to keep top of engine free from debris. See Cleaning Debris section.

CAUTION

Do not use water to clean engine parts. Water could contaminate fuel system. Use a brush or dry cloth.



Storage

Engines stored over 30 days need special attention.

1. To prevent gum from forming in fuel system or on essential carburetor parts:
   a) if fuel tank contains oxygenated or reformulated gasoline (gasoline blended with an alcohol or an ether), run engine until it stops from lack of fuel, **or**
   b) if fuel tank contains gasoline, either run engine until it stops from lack of fuel, or add a gasoline additive to the gas in the tank. (See parts list. Single-use pouches of gas additive are available from your service dealer.) If you use a gas additive, run the engine for several minutes to circulate the additive through the carburetor. Then, engine and fuel can be stored up to 24 months.
2. While engine is still warm, change oil.
3. Remove spark plug and pour about 1/2 oz. (15ml) of engine oil into cylinder. Replace spark plug and crank slowly to distribute oil.
4. Clean engine of surface debris, chaff or grass.
5. Store in a clean, dry area. Do not store in same area as a stove, furnace, water heater, or other appliance that uses a pilot light or has a device that can create a spark.

⚠ WARNING

When Transporting Equipment:

- Transport with fuel tank EMPTY or with fuel shut-off valve OFF.

When storing gasoline or equipment with fuel in tank:

- Store away from furnaces, stoves, water heaters, or other appliances that have a pilot light or other ignition source because they can ignite gasoline vapors.

Service

Contact an Authorized Briggs & Stratton Service Dealer. Each one carries a stock of Genuine Briggs & Stratton Parts and is equipped with special service tools. Trained mechanics assure expert repair service on all Briggs & Stratton engines. Only dealers advertising as “Authorized Briggs & Stratton” are required to meet Briggs & Stratton standards. When you purchase equipment powered by a Briggs & Stratton engine, you are assured of highly skilled, reliable service at more than 30,000 Authorized Service Dealers worldwide, including more than 6,000 Master Service Technicians. Look for these signs wherever Briggs & Stratton service is offered.

BRIGGS & STRATTON

MASTER SERVICE TECHNICIAN

You may locate your nearest Authorized Briggs & Stratton Service Dealer in our dealer locator map on our web site

www.briggsandstratton.com

or in the “Yellow Pages™” directory under “Engines, Gasoline” or “Gasoline Engines” or “Lawn Mowers” or similar category.

™

Note: Walking fingers logo and “Yellow Pages” are registered trademarks in various jurisdictions.

PARTIAL LIST OF GENUINE BRIGGS & STRATTON PARTS

Oil	100005 or 100028
Extended Life Series™ oil filter	696854
Standard Oil Filter	492932 or 5049
Extended Life Series™ air cleaner cartridge	792105
Flat panel air cleaner cartridge	499486
Flat panel air cleaner pre-cleaner	273638
Extended Life Series™ Fuel Filter (3.5” length)	695666
Standard Fuel filter (2.75” length)	691035
Gas Additive	5041
Resistor Spark Plug	491055
Long Life premium Spark Plug	5066
Static Suppression Spark Plug	691043
Spark Plug Wrench	19374
Spark Tester	19368
Oil Pump Kit (uses standard electric drill to remove oil from engine quickly)	5056

An illustrated shop manual includes common specifications and detailed information covering adjustment, tune-up and repair of Briggs & Stratton V-Twin engines. It is available for purchase from an Authorized Briggs & Stratton Service Dealer P/N 273521 or you can order it from

www.briggsandstratton.com

Specifications

We recommend that you contact an authorized Briggs & Stratton Service Dealer for all maintenance and service of the engine and engine parts. Use only genuine Briggs & Stratton parts.

In the state of California, Model 400000 and 440000 engines are certified by the California Air Resources Board to meet emissions standards for 250 hours. Such certification does not grant the purchaser, owner or operator of this engine any additional warranties with respect to the performance or operational life of this engine. This engine is warranted solely according to the product and emissions warranties stated elsewhere in this manual.

Tune-up Specifications

Armature air gap . . 0.008 – 0.012 in. (0.20 – 0.30 mm)

Spark plug gap . . . . . 0.030 in. (0.76 mm)

Valve clearance with valve springs installed and piston 1/4 in. (3 mm) past top dead center (check when engine is cold). See Repair Manual P/N 273521.

Intake . . . . . 0.004 – 0.006 in. (0.10 – 0.15 mm)

Exhaust . . . . . 0.004 – 0.006 in. (0.10 – 0.15 mm)

Model 400000

Bore . . . . . 2.97 in. (75.44 mm)

Stroke . . . . . 2.89 in. (73.4 mm)

Displacement . . . . . 40.0 cu. in. (656cc)

Model 440000

Bore . . . . . 3.12 in. (79.25 mm)

Stroke . . . . . 2.89 in. (73.4 mm)

Displacement . . . . . 44.2 cu. in. (725 cc)

Note: For practical operation, the horsepower loading should not exceed 85% of rated horsepower. Engine power will decrease 3-1/2% for each 1,000 feet (300 meters) above sea level and 1% for each 10° F (5.6° C) above 77° F (25° C). It will operate satisfactorily at an angle up to 15°.

Model, Type and Code Number

To get replacement parts or technical assistance in the future write your engine Model, Type and Code number along with the date of purchase here. These numbers are located on your engine.

Model

Type

Code

Purchase Date

Technical Information

Engine Power Rating Information

The gross power rating for individual gas engine models is labeled in accordance with SAE (Society of Automotive Engineers) code J1940 (Small Engine Power & Torque Rating Procedure), and rating performance has been obtained and corrected in accordance with SAE J1995 (Revision 2002-05). Actual gross engine power will be lower and is affected by, among other things, ambient operating conditions and engine-to-engine variability. Given both the wide array of products on which engines are placed and the variety of environmental issues applicable to operating the equipment, the gas engine will not develop the rated gross power when used in a given piece of power equipment (actual “on-site” or net horsepower). This difference is due to a variety of factors including, but not limited to, accessories (air cleaner, exhaust, charging, cooling, carburetor, fuel pump, etc.), application limitations, ambient operating conditions (temperature, humidity, altitude), and engine-to-engine variability. Due to manufacturing and capacity limitations, Briggs & Stratton may substitute an engine of higher rated power for this Series engine.

Emission Information

Engines that are certified to meet the California Air Resources Board (CARB) Tier 2 Emission Standards must display information regarding the Emissions Durability Period and the Air Index. Briggs & Stratton makes this information available to the consumer on our emission labels. The engine emission label will indicate certification information.

The **Emissions Durability Period** describes the number of hours of actual running time for which the engine is certified to be emissions compliant, assuming proper maintenance in accordance with the Operating & Maintenance Instructions. The following categories are used:

Moderate:
Engine is certified to be emission compliant for 125 hours of actual engine running time.

Intermediate:
Engine is certified to be emission compliant for 250 hours of actual engine running time.

Extended:
Engine is certified to be emission compliant for 500 hours of actual engine running time. For example, a typical walk-behind lawn mower is used 20 to 25 hours per year. Therefore, the **Emissions Durability Period** of an engine with an **intermediate** rating would equate to 10 to 12 years.

Certain Briggs & Stratton engines will be certified to meet the United States Environmental Protection Agency (USEPA) Phase 2 emission standards. For Phase 2 certified engines, the Emissions Compliance Period referred to on the Emissions Compliance label indicates the number of operating hours for which the engine has been shown to meet Federal emission requirements.

For engines less than 225 cc displacement:
Category C = 125 hours
Category B = 250 hours
Category A = 500 hours

For engines of 225 cc or more displacement:
Category C = 250 hours
Category B = 500 hours
Category A = 1000 hours

Warranty Information

Briggs & Stratton Corporation (B&S), the California Air Resources Board (CARB) and the United States Environmental Protection Agency (U.S. EPA) Emissions Control System Warranty Statement (Owner's Defect Warranty Rights and Obligations)

The California Air Resources Board (CARB), U.S. EPA and B&S are pleased to explain the Emissions Control System Warranty on your small off-road engine (SORE). In California, new small off-road engines model year 2006 and later must be designed, built and equipped to meet the State's stringent anti-smog standards.

Elsewhere in the United States, new non-road, spark-ignition engines certified for model year 1997 and later must meet similar standards set forth by the U.S. EPA. B&S must warrant the emissions control system on your engine for the periods of time listed below, provided there has been no abuse, neglect or improper maintenance of your small off-road engine.

Your emissions control system includes parts such as the carburetor, air cleaner, ignition system, fuel line, muffler and catalytic converter. Also included may be connectors and other emissions related assemblies.

Where a warrantable condition exists, B&S will repair your small off-road engine at no cost to you including diagnosis, parts and labor.

Briggs & Stratton Emissions Control Defects Warranty Coverage

Small off-road engines are warranted relative to emissions control parts defects for a period of two years, subject to provisions set forth below. If any covered part on your engine is defective, the part will be repaired or replaced by B&S.

Owner's Warranty Responsibilities

As the small off-road engine owner, you are responsible for the performance of the required maintenance listed in your Operating and Maintenance Instructions. B&S recommends that you retain all your receipts covering maintenance on your small off-road engine, but B&S cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the small off-road engine owner, you should however be aware that B&S may deny you warranty coverage if your small off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your small off-road engine to an Authorized B&S Service Dealer as soon as a problem exists.

The undisputed warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact a B&S Service Representative at 1-414-259-5262.

The emissions warranty is a defects warranty. Defects are judged on normal engine performance. The warranty is not related to an in-use emissions test.

Briggs & Stratton Emissions Control Defects Warranty Provisions

The following are specific provisions relative to your Emissions Control Defects Warranty Coverage. It is in addition to the B&S engine warranty for non-regulated engines found in the Operating and Maintenance Instructions.

1. Warranted Parts
   Coverage under this warranty extends only to the parts listed below (the emissions control systems parts) to the extent these parts were present on the engine purchased.
   a. Fuel Metering System
      - Cold start enrichment system
      - Carburetor and internal parts
      - Fuel pump
      - Fuel line, fuel line fittings, clamps
      - Fuel tank, cap and tether
      - Carbon canister

   b. Air Induction System
      - Air cleaner
      - Intake manifold
      - Purge and vent line

   c. Ignition System
      - Spark plug(s)
      - Magneto ignition system

   d. Catalyst System
      - Catalytic converter
      - Exhaust manifold
      - Air injection system, Pulse valve

   e. Miscellaneous Items
      - Vacuum, temperature, position, time sensitive valves and switches
      - Connectors and assemblies

2. Length of Coverage
   B&S warrants to the initial owner and each subsequent purchaser that the Warranted Parts shall be free from defects in materials and workmanship which caused the failure of the Warranted Parts for a period of two years from the date the engine is delivered to a retail purchaser.
3. No Charge
   Repair or replacement of any Warranted Part will be performed at no charge to the owner, including diagnostic labor which leads to the determination that a Warranted Part is defective, if the diagnostic work is performed at an Authorized B&S Service Dealer. For emissions warranty service contact your nearest Authorized B&S Service Dealer as listed in the "Yellow Pages" under "Engines, Gasoline," "Gasoline Engines," "Lawn Mowers," or similar category.
4. Claims and Coverage Exclusions
   Warranty claims shall be filed in accordance with the provisions of the B&S Engine Warranty Policy. Warranty coverage shall be excluded for failures of Warranted Parts which are not original B&S parts or because of abuse, neglect or improper maintenance as set forth in the B&S Engine Warranty Policy. B&S is not liable to cover failures of Warranted Parts caused by the use of add-on, non-original, or modified parts.
5. Maintenance
   Any Warranted Part which is not scheduled for replacement as required maintenance or which is scheduled only for regular inspection to the effect of "repair or replace as necessary" shall be warranted as to defects for the warranty period. Any Warranted Part which is scheduled for replacement as required maintenance shall be warranted as to defects only for the period of time up to the first scheduled replacement for that part. Any replacement part that is equivalent in performance and durability may be used in the performance of any maintenance or repairs. The owner is responsible for the performance of all required maintenance, as defined in the B&S Operating and Maintenance Instructions.
6. Consequential Coverage
   Coverage hereunder shall extend to the failure of any engine components caused by the failure of any Warranted Part still under warranty.

ABOUT YOUR ENGINE WARRANTY

Briggs & Stratton welcomes warranty repair and apologizes to you for being inconvenienced. Any Authorized Service Dealer may perform warranty repairs. Most warranty repairs are handled routinely, but sometimes requests for warranty service may not be appropriate. For example, warranty would not apply if engine damage occurred because of misuse, lack of routine maintenance, shipping, handling, warehousing or improper installation. Similarly, warranty is void if the serial number of the engine has been removed or the engine has been altered or modified.

If a customer differs with the decision of the Service Dealer, an investigation will be made to determine whether the warranty applies. Ask the Service Dealer to submit all supporting facts to his Distributor or the Factory for review. If the Distributor or the Factory decides that the claim is justified, the customer will be fully reimbursed for those items that are defective. To avoid misunderstanding which might occur between the customer and the Dealer, listed below are some of the causes of engine failure that the warranty does not cover.

Normal wear:

Engines, like all mechanical devices, need periodic parts service and replacement to perform well. Warranty will not cover repair when normal use has exhausted the life of a part or an engine.

Improper maintenance:

The life of an engine depends upon the conditions under which it operates, and the care it receives. Some applications, such as tillers, pumps and rotary mowers, are very often used in dusty or dirty conditions, which can cause what appears to be premature wear. Such wear, when caused by dirt, dust, spark plug cleaning grit, or other abrasive material that has entered the engine because of improper maintenance, is not covered by warranty.

This warranty covers engine related defective material and/or workmanship only, and not replacement or refund of the equipment to which the engine may be mounted. Nor does the warranty extend to repairs required because of:

1. PROBLEMS CAUSED BY PARTS THAT ARE NOT ORIGINAL BRIGGS & STRATTON PARTS.
2. Equipment controls or installations that prevent starting, cause unsatisfactory engine performance, or shorten engine life. (Contact equipment manufacturer.)
3. Leaking carburetors, clogged fuel pipes, sticking valves, or other damage, caused by using contaminated or stale fuel. (Use clean, fresh, lead-free gasoline and Briggs & Stratton Fuel Stabilizer, Part No. 5041.)
4. Parts which are scored or broken because an engine was operated with insufficient or contaminated lubricating oil, or an incorrect grade of lubricating oil (check oil level daily or after every 8 hours of operation. Refill when necessary and change at recommended intervals.) OIL GARD may not shut down running engine. Engine damage may occur if oil level is not properly maintained. Read Operating & Maintenance Instructions.
5. Repair or adjustment of associated parts or assemblies such as clutches, transmissions, remote controls, etc., which are not manufactured by Briggs & Stratton.
6. Damage or wear to parts caused by dirt, which entered the engine because of improper air cleaner maintenance, re-assembly, or use of a non-original air cleaner element or cartridge. (At recommended intervals, clean and re-oil the Oil-Foam element or the foam pre-cleaner, and replace the cartridge.) Read Operating & Maintenance Instructions.
7. Parts damaged by over-speeding, or overheating caused by grass, debris, or dirt, which plugs or clogs the cooling fins, or flywheel area, or damage caused by operating the engine in a confined area without sufficient ventilation. (Clean fins on the cylinder, cylinder head and flywheel at recommended intervals.) Read Operating & Maintenance Instructions.
8. Engine or equipment parts broken by excessive vibration caused by a loose engine mounting, loose cutter blades, unbalanced blades or loose or unbalanced impellers, improper attachment of equipment to engine crankshaft, over-speeding or other abuse in operation.
9. A bent or broken crankshaft, caused by striking a solid object with the cutter blade of a rotary lawn mower, or excessive v-belt tightness.
10. Routine tune-up or adjustment of the engine.
11. Engine or engine component failure, i.e., combustion chamber, valves, valve seats, valve guides, or burned starter motor windings, caused by the use of alternate fuels such as, liquified petroleum, natural gas, altered gasolines, etc.

Warranty is available only through service dealers which have been authorized by Briggs & Stratton Corporation. your nearest Authorized Service Dealer is listed in the "Yellow Pages™" of your telephone directory under "Engines, Gasoline" or "Gasoline Engines," "Lawn Mowers," or similar category.

BRIGGS & STRATTON ENGINE OWNER WARRANTY POLICY

Effective September 1, 2006

LIMITED WARRANTY

Briggs & Stratton Corporation will repair or replace, free of charge, any part(s) of the engine that is defective in material or workmanship or both. Transportation charges on parts submitted for repair or replacement under this warranty must be borne by purchaser. This warranty is effective for and is subject to the time periods and conditions stated below. For warranty service, find the nearest Authorized Service Dealer in our dealer locator map at www.briggsandstratton.com, or by calling 1-800-233-3723, or as listed in the 'Yellow Pages™'.

THERE IS NO OTHER EXPRESS WARRANTY. IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR FROM PURCHASE, OR TO THE EXTENT PERMITTED BY LAW ANY AND ALL IMPLIED WARRANTIES ARE EXCLUDED. LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES ARE EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW. Some states or countries do not allow limitations on how long an implied warranty lasts, and some states or countries do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state and country to country.

WARRANTY TERMS **

Brand / Product Type	Consumer Use	Commercial Use
Vanguard™	2 years	2 years
Extended Life Series™	2 years	1 year
I/C®, or Intek I/C®, Intek Pro™	2 years	180 days
Kerosene Fuel Operated Engines	1 year	90 days
All Other Briggs & Stratton Engines	2 years	90 days

** Engines used on Home Standby Generator applications are warranted under consumer use only. This warranty does not apply to engines on equipment used for prime power in place of a utility. **Engines used in competitive racing or on commercial or rental tracks are not warranted.**

The warranty period begins on the date of purchase by the first retail consumer or commercial end user, and continues for the period of time stated in the table above. "Consumer use" means personal residential household use by a retail consumer. "Commercial use" means all other uses, including use for commercial, income producing or rental purposes. Once an engine has experienced commercial use, it shall thereafter be considered as a commercial use engine for purposes of this warranty.

NO WARRANTY REGISTRATION IS NECESSARY TO OBTAIN WARRANTY ON BRIGGS & STRATTON PRODUCTS. SAVE YOUR PROOF OF PURCHASE RECEIPT. IF YOU DO NOT PROVIDE PROOF OF THE INITIAL PURCHASE DATE AT THE TIME WARRANTY SERVICE IS REQUESTED, THE MANUFACTURING DATE OF THE PRODUCT WILL BE USED TO DETERMINE THE WARRANTY PERIOD.

Briggs & Stratton Engines Are Made Under One Or More Of The Following Patents: Design D-247,177 (Other Patents Pending)

6,691,683	6,520,141	6,325,036	6,145,487	6,012,420	5,803,035	5,548,955	5,243,878	5,138,996	4,875,448	D 476,629
6,647,942	6,495,267	6,311,663	6,142,257	5,992,367	5,765,713	5,546,901	5,235,943	5,086,890	4,819,593	D 457,891
6,622,683	6,494,175	6,284,123	6,135,426	5,904,124	5,732,555	5,445,014	5,234,038	5,070,829	4,720,638	D 368,187
6,615,787	6,472,790	6,263,852	6,116,212	5,894,715	5,645,025	5,503,125	5,228,487	5,058,544	4,719,682	D 375,963
6,617,725	6,460,502	6,260,529	6,105,548	5,887,678	5,642,701	5,501,203	5,197,426	5,040,644	4,633,556	D 309,457
6,603,227	6,456,515	6,242,828	6,347,614	5,852,951	5,628352	5,497,679	5,197,425	5,009,208	4,630,498	D 372,871
6,595,897	6,382,166	6,239,709	6,082,323	5,843,345	5,619,845	5,320,795	5,197,422	4,996,956	4,522,080	D 361,771
6,595,176	6,369,532	6,237,555	6,077,063	5,823,153	5,606,948	5,301,643	5,191,864	4,977,879	4,520,288	D 356,951
6,584,964	6,356,003	6,230,678	6,064,027	5,819,513	5,606,851	5,271,363	5,188,069	4,977,877	4,512,499	D 309,457
6,557,833	6,349,688	6,213,083	6,040,767	5,813,384	5,605,130	5,269,713	5,186,142	4,971,219	4,453,507	D 308,872
6,542,074	6,347,614	6,202,616	6,014,808	5,809,958	5,497,679	5,265,700	5,150,674	4,895,119	4,430,984	D 308,871

THE POWER WITHIN™